Strange Sorting

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 1024 megabytes

> We present an extremely simple sorting algorithm. It may look like it is obviously wrong, but we prove that it is in fact correct. [a]

After learning the strange sorting algorithm in the problem *Paimon Sorting* of The 2021 ICPC Asia Nanjing Regional Contest, Little Cyan Fish comes up with the following task.

Given a sequence $a_1, a_2, \cdots, a_n$ which is a permutation of n, your task is to sort the permutation in ascending order by applying the following operation for at most $\lfloor \frac{n}{2} \rfloor$ times: Choose two indices l and r satisfying $1 \le l < r \le n$ and $a_l > a_r$, and then sort $a_l, a_{l+1}, \cdots, a_r$ in ascending order.

Recall that a permutation of n is a sequence of length n, in which each integer from 1 to n (both inclusive) appears exactly once. Also recall that $\lfloor x \rfloor$ indicates the largest integer less than or equal to x.

Input

There are multiple test cases. The first line of the input contains an integer T indicating the number of test cases. For each test case:

The first line contains an integer n ($1 \le n \le 100$) indicating the length of the permutation.

The second line contains n distinct integers $a_1, a_2, \cdots, a_n$ ($1 \le a_i \le n$) indicating the given permutation.

It's guaranteed that the sum of n of all test cases will not exceed 10^4.

Output

For each test case, first output one line containing one integer k ($0 \le k \le \lfloor \frac{n}{2} \rfloor$) indicating the number of operations you're going to use. Then output k lines, where the i-th line contains two integers l_i and r_i separated by a space, indicating the two indices you choose for the i-th operation.

It can be proven that the answer always exists. If there are multiple valid answers, you can output any of them.

Example

standard input	standard output
3	2
6	3 6
2 3 4 6 5 1	1 3
5	0
1 2 3 4 5	1
3	1 3
2 3 1	

[a] Stanley P. Y. Fung. Is this the simplest (and most surprising) sorting algorithm ever? arXiv:2110.01111

Note

For the first sample test case, after the 1-st operation the permutation becomes $\{2, 3, 1, 4, 5, 6\}$, and after the 2-nd operation the permutation becomes $\{1, 2, 3, 4, 5, 6\}$, which is in ascending order.